

SPRINGS VALLEY LAKE  
Orange County  
2006 Fish Management Report

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## EXECUTIVE SUMMARY

- A general lake survey was conducted on June 12, 2006. An aquatic vegetation survey was conducted on July 20.
- The Secchi disk reading was 14.0 ft and the conductivity was 187 $\mu$ S.
- Submersed vegetation was found to a maximum depth of 13.0 ft. Eurasian watermilfoil and brittle naiad were the dominant plants, occurring at 57% and 49% of the sites. Other submergent plants found were American elodea, American pondweed, chara, coontail, curlyleaf pondweed, and sago pondweed.
- A total of 215 fish, representing nine species, was collected during the survey. Largemouth bass ranked first by number followed by bluegill and redear sunfish. Largemouth bass ranked first by weight followed by white sucker and channel catfish.
- Largemouth bass grew well to age-4 and age-5, averaging 13.6 and 15.3 in. Bluegill grew well at all ages.
- A general fisheries survey should be conducted in 2009.
- The DFW should continue to stock 2,256 channel catfish biennially.

## INTRODUCTION

Springs Valley Lake is a 135-acre impoundment located about 6 mi south of the Town of French Lick in Orange County. Area residents frequently refer to the reservoir as Tucker Lake. The lake was built in 1962 and 1963. The U. S. Forest Service (USFS) owns the lake and the surrounding property. However, the Indiana Department of Natural Resources (IDNR), Division of Fish and Wildlife (DFW) manages the lake's fishery. Angler access includes a concrete boat ramp and shoreline fishing along USFS trails. There are no access fees to fish this lake and no outboard motors are allowed. Springs Valley Lake's fishery is currently regulated by the state's standard length and bag limits.

The DFW began stocking Springs Valley Lake with channel catfish in 1967. Currently, 2,256 channel catfish are stocked biennially. The general survey in 2000 revealed that an excellent bluegill and redear sunfish fishery had developed. In addition, the channel catfish catch rates were good with fish ranging from 13.5 to 29.0 in. Conversely, only three largemouth bass over 14 in were collected.

## METHODS

A general survey was conducted on June 12, 2006. Some of the lake's physical and chemical characteristics were measured. Submersed aquatic vegetation was sampled on July 20 using guidelines written by Pearson (2004). A GPS was used to record the location of all sampling sites.

Fish collection effort consisted of pulsed DC night electrofishing with two dippers for 0.75 h, two trap net lifts, and four experimental-mesh gill net lifts. All fish collected were measured to the nearest 0.1 in TL. Average weights were estimated by using the Fish Management District 7 averages. Fish scale samples were taken from a subsample of game fish for age and growth analysis. Relative stock density was the only stock index used to assess the fishery due to the low number of fish collected (Anderson and Neumann 1996). All sampling was done in accordance to the DFW sampling guidelines (Shipman 2001).

## RESULTS

Springs Valley Lake has a maximum depth of 31.0 ft. The Secchi disk reading was 14.0 ft and DO concentrations were marginal for fish survival below 16.0 ft. The conductivity was 187  $\mu$ S.

Submersed vegetation was found in 80% of the littoral sites to a maximum depth of 13.0 ft. The overall mean rake score was 3.11. Eurasian watermilfoil's site frequency was 57%, followed by brittle naiad (49%), and American elodea (38%). Other submersed species found were American pondweed, chara, coontail, curlyleaf pondweed, and sago pondweed. Water willow and filamentous algae were also observed.

A total of 215 fish, representing nine species, was collected that weighed approximately 109 lbs. Largemouth bass ranked first by number (41%), followed by bluegill (31%), and redear sunfish (8%). Largemouth bass ranked first by weight (39%), followed by white sucker (26%), and channel catfish (19%). Other species collected in minimal number included warmouth, longear sunfish, black bullhead, and black crappie. Species collected in past surveys, but not in this survey include brown bullhead, yellow bullhead, green sunfish, grass pickerel, white crappie, common carp, golden shiner, and blackstripe topminnow.

A total of 87 largemouth bass was sampled that weighed 43 lbs. They ranged in length from 4.3 to 19.2 in. The catch rates were 113.0/electrofishing h, 0.0/trap net lift, and 1.0/gill net lift. The electrofishing catch rate in 2000 was 173.3/h. Largemouth bass growth was fast for ages 1, 2, 4, and 5, and average for age 3 when compared to the district averages. Age-4 and age-5 bass averaged 13.6 and 15.3 in. Bass growth was similar to 2000 results. The RSD14 increased from 3 to 14.

Sixty-seven bluegill were sampled that weighed 11 lbs. They ranged in length from 2.2 to 8.1 in and 20% were at least 7.0 in long. The catch rates were 83.0/electrofishing h, 1.0/trap net lift, and 1.0/gill net lift. The catch rates in 2000 were 244.0/electrofishing h and 44.0/trap net lift. Bluegill growth was fast for all ages with age-4 and age-5 bluegill averaging 7.4 and 8.3 in. Growth was similar in 2000.

A total of 17 redear sunfish was sampled that weighed 4 lbs. They ranged in length from 2.7 to 9.7 in. The catch rates were 16.0/electrofishing h, 4.0/trap net lift, and 1.0/gill net lift. Catch rates for 2000 were similar. Age-1 and age-2 redear grew fast, while ages 3, 4, and 5

possessed average growth. In 2000, redear were fast growing with age-5 fish averaging 10.8 in versus 9.5 in in 2006.

Nine channel catfish were sampled that weighed 21 lbs. They ranged in length from 14.7 to 22.2 in. Catch rates were 9.0/electrofishing h, 2.0/gill net lift, and none were caught in trap nets.

## DISCUSSION

Since the 2000 survey, the largemouth bass electrofishing catch rate decreased by 35%. However, the proportion of larger bass in the fishery has increased as indicated by the elevated RSD14. Also, there is a large year class of age-2 bass that comprised 52% of the bass sample. As these age-2 bass recruit to older ages, the PSD should increase as well as the overall number of larger bass in the fishery if the current bass growth is maintained.

The bluegill population possesses excellent growth, but their numbers have substantially decreased since 2000. The 2006 electrofishing and trap net catch rates decreased by 66% and 98%. Also, there were more age-3 bluegill sampled versus age 1 and age 2 combined. It appears that the bluegill population had poor reproduction in 2004 and 2005. Typically, low bluegill numbers are due to an overabundant bass population and/or the lack of aquatic vegetation. Springs Valley Lake does not have either of these traits. The poor reproduction was probably caused by unusual environmental factors, as Springs Valley Lake has not historically had bluegill production problems. A general fisheries survey should be conducted in 2009 to monitor the bluegill population.

The redear sunfish and channel catfish populations provide for additional fishing opportunities. Redear sunfish grew fast and 35% of the sample was 7.0 in or longer. The channel catfish population was comprised of mostly fish greater than 16.0 in and should continue to be maintained with the current stocking regime.

## RECOMMENDATIONS

- A general fisheries survey should be conducted in 2009.
- Continue to stock 2,256 8.0 in channel catfish biennially.

#### LITERATURE CITED

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# APPENDIX